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The Templeton Crocker Expedition. I. Six New Brachyuran Crabs from the Gulf of California¹.

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[Introductory Note: This is the first of a series of papers dealing with the specimens collected on the Twenty-fourth or Templeton Crocker Expedition of the Department of Tropical Research of the New York Zoological Society; William Beebe, Director.]

MAJIDAE.

Mithrax (Mithrax) mexicanus Glassell, sp. nov.

Type: Male, holotype; Cat. No. 36,712, Department of Tropical Research of the New York Zoological Society; Station 136, Dredge 27; from the Gulf of California, 23° 28' N. Lat., 109° 24' W. Long., 3 miles northeast of Cape Pulmo, Lower California, Mexico; 50 fathoms; April 30, 1936; 4-foot Blake dredge; collected by William Beebe on Templeton Crocker's yacht *Zaca*.

Diagnosis: Horns long, divergent. Antennae long. Hepatic spine single, most prominent of lateral spines. No paired spinules on mesogastric region.

Description of male: Carapace pyriform, tumid, setose, much longer than wide; lateral margins without an angle. There are six median spines, none very prominent, except the posterior marginal spine. Of the five antero-lateral spines the hepatic is the most prominent, the other four being small; a subhepatic spinule; a prominent postero-lateral spine, about half the size of the hepatic spine, located above the level of the antero-lateral spines; a pair of epibranchial spines parallel the antero-lateral spines; a pair of spines on the metabranchial region parallel the antero-lateral margin. The rostral horns are nearly $\frac{1}{4}$ the body length, diverging, regularly tapering. The suborbital margin is armed with two spines, the median large, the distal largest and prominent in dorsal view; the supra-orbital margin has three spines, postorbital, preorbital and median, the latter the smallest. The antennae are nearly as long as the width of the carapace.

Chelipeds small, not as long as the first ambulatory leg; merus with a spine at upper distal end, another just proximal to this; carpus with 3 or 4 small dull spines; hands smooth, cylindrical; fingers not gaping.

First ambulatory leg nearly as long as the carapace; legs tomentose and setose; merus armed with a distal spine on upper carpal articulation. Terminal segment of abdomen longer than wide, sides converging, tip arcuate; not as wide as penultimate segment. Buccal area widest anteriorly.

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Measurements: Male holotype, length of carapace including rostral horns 16.2 mm., width 9.4 mm.

Material examined: The male holotype.

Remarks: This proposed species is closely allied to *M. (M). spinipes* (Bell), 1835 (1836), but differs from that species in that it lacks the small, side by side spinules on the anterior mesogastric region; by the carapace being pyriform, instead of having a lateral angle, in this respect it also differs from *M. (M). acuticornis* Stimpson, 1870. It differs from both of these species in that the hepatic spine is the most prominent, the others being very small, and by the shape of the ultimate segment of the abdomen being subquadrilateral, instead of subtriangular.

Stenocionops beebei Glassell, sp. nov.

Type: Female, holotype; Cat. No. 36,714, Department of Tropical Research of the New York Zoological Society; Station 136, Dredge 23; from the Gulf of California, 23° 28' N. Lat., 109° 24' W. Long., 1½ miles north-east of Cape Pulmo, Lower California, Mexico; 50 fathoms; May 1, 1936; 4-foot Blake dredge; collected by William Beebe on Templeton Crocker's yacht *Zaca*.

Diagnosis: Median spines 5; none on posterior margin. Lateral marginal spines 3. Rostral horns widely divergent, about 78°, nearly 1/5 length of carapace.

Description: Carapace triangular-ovate; regions tumid, covered with thick sponge-like pubescence and groups of curve-tipped setae. Median spines 5, the anterior very small, the rest large, stout, cylindrical, blunt; three large, conical, upward-pointing, lateral spines, the hepatic joined to the smaller subhepatic by a ridge; a pair of stout upward-pointing, meso-branchial spines, one of which is opposite the cardiac region; with the proximal antero-lateral spines and the cardiac spine, these form a transverse line of five heavy spines across the carapace at this point; the other branchial spines with the median lateral spines form a transverse row of four spines across the carapace at the metagastric region.

Rostral horns widely diverging, at an angle of nearly 78°, regularly tapering to slender, slightly incurving tips. Supraorbital spine heavy, upturned; preorbital spine separated from supraorbital by a long narrow sinus.

Chelipeds almost as long as first ambulatory leg; merus armed on upper crest with 4 large spines and a distal lobe; carpus roughened with a few low tubercles; manus long, cylindrical, tapering, armed with a single proximally placed tubercle on upper margin; fingers long, tapering, slightly gaping proximally. Ambulatory legs stout, pubescent; dactyli pubescent, curved.

Color in alcohol: Spines a bright pink. Fingers brown, tips white.

Measurements: Female holotype; length of carapace with horns 56 mm., without horns 48 mm., length of rostral horns 10 mm., width of carapace with lateral spines 45 mm., without spines 38 mm., length of hand including fingers 24 mm., width at base 4 mm.

Material examined: The female holotype, and a juvenile male paratype from the same dredge haul.

Remarks: This proposed species is allied to *S. triangulata* Rathbun, 1892, but differs from that species, not only by being larger, but, by having 5 median spines, instead of 9, and by having 3 large, lateral spines, instead of 3 lateral spines and a hepatic.

This species is named for Dr. William Beebe, director of the Department of Tropical Research of the New York Zoological Society, whose ex-

ploits and adventures in the field of natural history have cast a glamour on his calling, and honor on his fraternity.

XANTHIDAE.

Actaea crockeri Glassell, sp. nov.

Type: Male, holotype; Cat. No. 36,731, Department of Tropical Research of the New York Zoological Society; Station 136, Dredge 5; from the Gulf of California, 23° 31' N. Lat., 109° 27' 30" W. Long., 2 miles south-southeast of Punta Arena, Lower California, Mexico; 33 fathoms; April 19, 1936; 4-foot Blake dredge; collected by William Beebe on Templeton Crocker's yacht *Zaca*.

Diagnosis: Carapace with regional lobes spinuous anteriorly; tuberculate posteriorly; lateral lobes dentiform. Ambulatory legs crested with a double row of lanceolate teeth on carpus and propodus. Chelipeds covered with thickset forward-pointing spinules, coarser than on carapace.

Description: Carapace ovoid, nodulous; deeply furrowed, nude; the nodules on the anterior half thickly covered with short, sharp-tipped, forward-pointing spinules; those of the posterior half, less thickly covered with tubercles and granules. A granular ridge parallels the posterior border. Cardiac region divided by a median sulcus. Front deflexed, a small median sulcus, lobes arched, spinuous in dorsal view, sinuous in front view. Upper ocular margin serrate with short, sharp-pointed spines; lower margin tuberculate. Lateral dentate lobes four (besides the orbital), the first very small, the second smaller than the third and fourth; second and third, forward and upward pointing, granulate on posterior face, spinate anteriorly; the margins of 1—2—3 teeth are serrate with forward-pointing spinules.

Chelipeds unequal, the right the larger, covered with short, sharp granules; the carpus with a distal transverse sulcus paralleling the margin, a spine at the inner angle; hands covered with thickset sharp spinules; fingers channeled, that of the major hand crested. Ambulatory legs short; merus with a row of short spines on upper margin, granulous; carpus and propodus armed with an irregular double row of lanceolate spines on the flattened, channeled surface, also with spines and granules on the posterior side; dactyli pubescent. Merus of outer maxillipeds with truncate, cylindrical tubercles.

Measurements: Male holotype, length of carapace 5.5 mm., width 8 mm.

Material examined: The male holotype.

Remarks: This proposed species is allied to *A. angusta* Rathbun, 1898, but differs from that species by having the posterior half of the areolate carapace granulate, the anterior areolations spinuous, instead of all the areolations granulous, by having the lateral lobes covered with spinules, instead of granulous, and by the legs being heavily spined, instead of granulous.

This species is named for Mr. Templeton Crocker whose interest and generosity made possible this expedition.

Pilumnus pelagius Glassell, sp. nov.

Type: Female, holotype; Cat. No. 36,731, Department of Tropical Research of the New York Zoological Society; Station 136, Dredge 13; from the Gulf of California, 23° 29' N. Lat., 109° 24' W. Long., 5½ miles southeast of Punta Arena, Lower California, Mexico; 45 fathoms; April 20, 1936; 4-foot Blake dredge; collected by William Beebe on Templeton Crocker's yacht *Zaca*.

Diagnosis: Antero-lateral spines 4, forming a ridge which leads downward to buccal angle. Carapace covered with pubescence forming a ragged pattern. Upper surface of carpus and manus of chelipeds flattened; outer surface of hands rough and pubescent.

Description: Carapace about $\frac{2}{3}$ as long as wide, uneven, lumpy, and rough with scattered tubercules and granules amid the pubescence. Regions margined by deep wide furrows, a deep median sulcus. Front deflexed, bilobed, the outer margin of each lobe slightly concave. A spine at outer angle of orbit, followed below by two spinules and a row of long hairs. Antero-lateral spines forming a downward curve toward the buccal cavity but joined at their bases in a smooth carina leading to the orbit; the two posterior spines are much nearer than the remainder, and surmounted at their apices with fine, sharp, forward-pointing spinules. A few spinules on subhepatic region.

Chelipeds, except the fingers, densely pubescent, setaceous, concealing the sharp granules or spinules interspersed; a stout, heavy, sharp-tipped spine at inner angle of carpus; upper surface of carpus and manus flattened; manus with a line of 5 or 6 spinules on flattened upper surface; fingers nude, except for proximal upper crest of dactyli; dactyl of major hand armed with heavy, lobe-like teeth, the one at the gape the heaviest.

Ambulatory legs of moderate length, pubescent, and furnished with a fringe of longer hairs, concealing spinules on upper surface. Abdomen covered with pubescence and fringed with long hairs.

Sexual variation: None.

Color in alcohol: Anteriorly rather pink. Spines on ambulatory legs a rose color. Fingers a dark brown. Pubescence a dirty brown.

Measurements: Female holotype, length of carapace 9 mm., width 14.3 mm. Male paratype, length 7.2 mm., width 9.2 mm.

Material examined: Two females and one male including the type; all three specimens were taken in the same dredge haul.

Remarks: This proposed species is allied to *P. limosus* Smith, 1869, but differs from that species in that the anterior half of the carapace is not so densely tomentose, the antero-lateral spines are not in one plane, the front without a deep, wide, median sulcus, the ambulatory legs with spines and setae. The abdomen of the male is relatively wider, with the ultimate segment subtruncate, instead of triangular as in *P. limosus*.

GONEPLACIDAE.

Chasmocarcinus ferrugineus Glassell, sp. nov.

Type: Female, holotype; Cat. No. 36,735, Department of Tropical Research of the New York Zoological Society; Station 136, Dredge 21; from the Gulf of California, 23° 29' N. Lat., 109° 25' W. Long., 5 miles southeast of Punta Arena, Lower California, Mexico; 45 fathoms; April 30, 1936; 4-foot Blake dredge; collected by William Beebe on Templeton Crocker's yacht *Zaca*.

Diagnosis: Orbits transverse. An antero-lateral marginal granulate line. Sternum and abdomen of female lightly pubescent and punctate; abdomen heavily fringed. Merus of ambulatory legs wide.

Description: Carapace nearly $\frac{3}{4}$ as long as wide. Fronto-orbital distance less than one-half the width of carapace. Surface covered with pubescence, punctate, granular toward the marginal angle and the posterior border; sparse, clavate setae on the sides, antero-lateral shoulders and the eye-stalks. Two deep longitudinal impressed lines in the center of the carapace. A distinct, blunt, granular antero-lateral margin. Front trun-

cate, straight, entire. Eyes filling the orbits; orbits transverse in dorsal view. Second and third joints of antennules very long.

Chelipeds lightly margined with hair, for the most part smooth; merus with a transverse rounded lobe near distal end, a double margin parallels the carpal articulation; ridges and lobes setose; carpus nearly square with a setose lobe at inner angle; hands with fingers long, regularly tapering, slightly arched, crossing at the tips, not gaping; pollex subhorizontal; lower margin of hand slightly sinuous, with granulate, setose margin.

Ambulatory legs long, hairy; merus stout. Female abdomen lightly pubescent and punctate, with heavy marginal fringe.

Color in alcohol: Pubescence and setae a dull brick red or rusty color. Carapace under pubescence a bluish-gray.

Measurements: Female holotype, length of carapace 9.2 mm., width 13 mm. Male paratype, length 7.5 mm., width 10.5 mm.

Material examined: Two females, one male, including the holotype; all three specimens from the same dredge haul.

Remarks: This proposed species is closely allied to *C. latipes* Rathbun, 1898, but differs from that species in that the orbits are transverse, instead of oblique, the eyes fitting the orbits, instead of not fitting, the merus of the chelipeds with an upper subdistal, transverse lobe or prominence, instead of without this lobe.

It may be that this species is analogous to *C. latipes*. To establish these differences with absolute certainty, however, the examination of a number of specimens is necessary.

CYMOPOLIIDAE.

Cymopolia zaca Glassell, sp. nov.

Type: Male, holotype; Cat. No. 36,739, Department of Tropical Research of the New York Zoological Society; Station 136, Dredge 26, from the Gulf of California, 23° 27' N. Lat., 109° 24' W. Long., 2 miles northeast of Cape Pulmo, Lower California, Mexico; 45 fathoms; May 1, 1936; 4-foot Blake dredge; collected by William Beebe on Templeton Crocker's yacht *Zaca*.

Diagnosis: Five unequal antero-lateral teeth. Carapace half again as wide as long. First ambulatory leg reaching nearly to distal end of carpus of second.

Description: Carapace very broad and not very convex, with five antero-lateral teeth besides orbital tooth; the first two triangular, sub-acute, having a longer base than the third and fourth; these four teeth are upturned and forward-pointing; the fifth tooth is lamellar, horizontal, on a lower plane and occupies the lateral angle. Tubercles of carapace well marked, high, trending forward; intervening space filled with inconspicuous granules and scant, short hairs. Two median frontal teeth rounded and separated by a triangular sinus with a sharp base; lateral sinuses shallow, wider, oblique; lateral teeth rounded, lobular. The first sinus of supraorbital margin is narrow U-shaped; the second V-shaped; middle tooth broad, obliquely truncate, next tooth narrower, rounded. Outer orbital tooth inclined forward and inward, outer margin straight. Ridge above posterior margin crenulate with small tubercles.

Chelipeds slender, subequal, the right the major; fingers with tips crossing. Sinuses of suborbital margin V-shaped, the inner the sharpest; outer lobe oblique, bilobed; inner lobe truncate, rounded posteriorly, advanced to half the height of outer lobe and spatulate pterygostomial lobe.

First ambulatory leg slender, reaching nearly to distal end of carpus of second; dactyl slightly curved; second and third legs nearly twice as long as width of carapace; merus joints narrowing in distal half; four longitudinal crests, anterior distal end forming a right angle; anterior lobes on carpus obsolete, the margin forming a straight crest, the distal end concave with a small tooth on propodal articulation; propodus enlarging little distally; dactylus with sinuous posterior margin.

Measurements: Male holotype, length of carapace 8.5 mm., width 13.1 mm., length of second leg 25.5 mm., length of first leg 11.8 mm.

Material examined: The male holotype.

Remarks: This proposed species is closely allied to *C. fragilis* Rathbun, 1893, but differs from this species in having five antero-lateral spines, instead of four, by having the first leg extending past the merus of the second, instead of not extending past the merus, by the suborbital lobe being truncate, instead of bilobed, and not equally advanced with the pterygostomial lobe.

This species is named for Mr. Templeton Crocker's yacht *Zaca* of San Francisco, California, on board of which members of the New York Zoological Society made an expedition into the Gulf of California during 1936 and collected the specimens described in the present paper.